Case Study

Bangladesh, Ghana, and Mexico

Three Examples of e-Commerce

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Private sector firms worldwide, in sectors ranging from tourism to agriculture to manufacturing, are integrating electronic commerce (e-commerce) into their everyday business practices.[1] In developing countries, large companies and small and medium enterprises (SMEs) alike have adopted e-commerce techniques such as web-based marketing and customer service, electronic transaction processing, inventory management, e-procurement systems, and email. Yet despite the rapid and demonstrated uptake of e-commerce techniques, there is still scant detailed evidence about how individual companies in developing countries are using e-commerce to improve their business and what the overall costs and benefits are of using those techniques.[2]

This paper explores how enterprises in three countries—Ghana, Bangladesh, and Mexico—have begun to integrate e-commerce techniques into their businesses. The first, a sophisticated Internet café in Accra, Ghana, has branched out from its core focus on providing Internet access to establish a highly successful business incubator facility servicing e-commerce-oriented companies. The second, a group of shoe manufacturers in Bangladesh, has applied e-commerce techniques to increase their exports to international markets. In the third company, Mexicana Airlines, a comprehensive web portal has helped expand product lines and improve customer service capabilities.

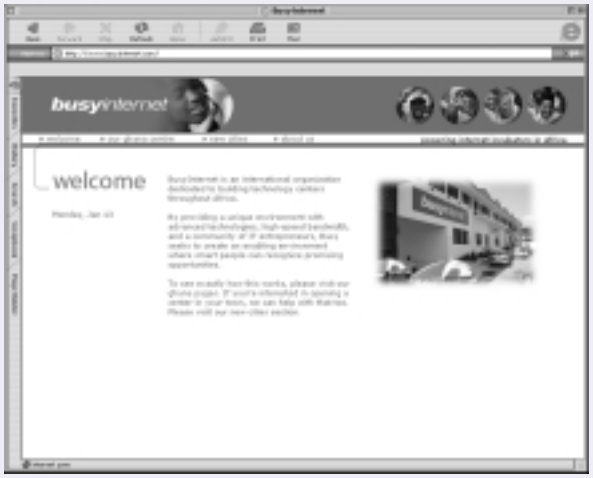
Taken together, these three mini case studies demonstrate some critical principles about how private sector firms of varying sizes in developing countries can adopt and adapt e-commerce methods and systems to strengthen their businesses. First, even when access to affordable information and communication technologies

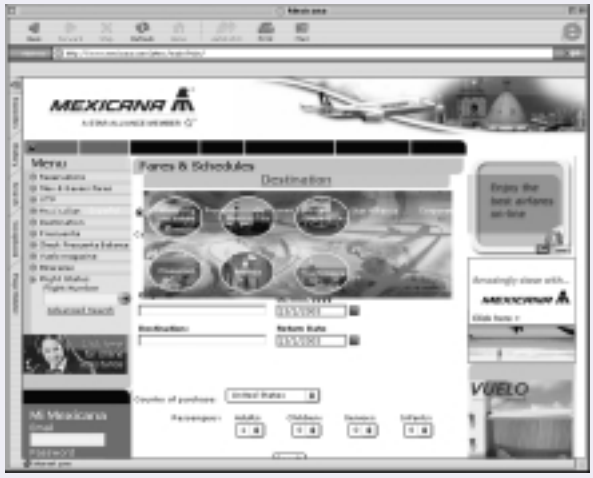
1. Bangladesh applied e-commerce techniques to increase their exports

1. Bangladeshi women assemble shoes for export
2. Exports to a Japanese shoe store

2. Ghana created a sophisticated internet cafe

http://www.busyinternet.com





3. The Mexican national airline developed a comprehensive web portal

http://www.mexicana.com

(ICTs) is difficult, companies can successfully integrate e-commerce into their activities by using, leveraging, and, in turn, strengthening existing public access infrastructure, such as telecenters. Second, e-commerce need not revolve solely around business-to-consumer, transaction-oriented processes. There is much more to e-commerce than the Amazon.com model[3]. As these examples illustrate, often the most important forms of e-commerce involve business-to-business interactions and non-transaction-oriented processes. This can include online technical support, back office automation, basic web site promotion, and offshore call centers. Third, it is critical to align e-commerce tools and applications to the expectations of the prospective market, the local culture, and the needs and capacities of specific customers. Finally, e-commerce initiatives can benefit from being integrated within economic sectors, such as tourism, that have high growth potential.

Business Incubators and E-Commerce Development in Ghana

Context

Ghana has been described as one of the "jewels" of West Africa due to its scenic environment, long history of strong educational institutions, and extensive natural resources. A country of approximately 20 million, Ghana possesses tremendous economic potential, particularly through its gold, timber, and cocoa production, which form its major foreign exchange sources. Yet, despite the recent advent of a pro-business, progressive government and a GDP growth rate of approximately 3 percent in 2001, Ghana still suffers from chronic unemployment, low per capita incomes, a reliance on international donors to support government expenditures, and high inflation[4].

This rather bleak economic outlook carries over to Ghana's telecom sector. Amidst often half-hearted efforts by the government to liberalize the sector, Ghana remains firmly in the grip of the state monopoly operator, Ghana Telecom. Competition in both the fixed-line and mobile market is almost non-existent, and most Ghanaians have little access to affordable or reliable ICTs. In 2001, it was estimated that Ghana had just 249,000 fixed telephone lines, a ratio of about one to every 100 people and there were 2.08 cellular and fixed lines for every 100 users and only 0.19 Internet users per 100 people. Given the poor telecom infrastructure and prices for bandwidth that were almost 10 times that of the U.S., the low Internet penetration among average citizens was easy to understand.[5]

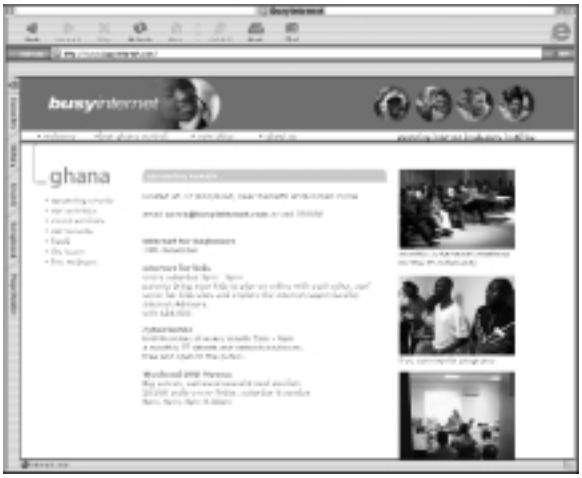
In response to the high prices for connectivity, and for the Internet in particular, Ghana witnessed the emergence of hundreds of cyber cafés. The bulk of these, approximately 250, were established in Ghana's bustling capital city of Accra. These Internet cafes fulfilled an important role by providing affordable ICT services such as email, chat, Internet browsing, and simple fax and photocopying. But none went beyond that to offer ICT services geared to areas such as e-commerce promotion and development—that is, not until the advent of BusyInternet.[6]

Emergence of BusyInternet

In the heart of downtown Accra, a city of approximately 2.3 million people, US-based Internet entrepreneur Mark Davies decided to establish an Internet café that would change the traditional way that cyber cafés did business. Davies had been encouraged by the country's switch to a pro-business progressive government and the country's nationwide fiber optic network, one of the only such networks in sub-Saharan Africa. In addition, he was impressed by the energetic entrepreneurs he met, people who would be keen to develop the kind of ICT-enabled business that a high-end cyber café could provide. As Davies remarked: "There are a lot of smart and ambitious people around who are really keen to push this sector. It will be interesting to see how fast this industry develops. We want to facilitate that and see Ghana participate regionally and globally."[7]

In 2000, Davies launched an international ICT development company, BusyInternet International, in New York and created a subsidiary known as BusyInternet Ghana. To launch the cyber café in Accra, Davies received funding largely through investments from local Ghanaian firms, including Databank, a technology company called Soft, and Fidelity Discount House. These companies own the majority of shares in the center, while the IFC and other investors are minority shareholders.[8]

Davies converted a dilapidated bottle gas plant into the café, which included over 15,000 square feet of offices and training rooms. The center is run on a for-profit basis and has 50 employees. It offers consumers high-speed Internet browsing (for about $1 USD per hour), software programs, disc



http://www.busyinternet.com
Ghana: BusyInternet homepage

"Bandwidth in Ghana is so scarce that simply providing good connectivity at retail prices is a great business model"

"Getting Ghana Going," by Esther Dyson, distributed by the New York Times Syndicate, March 20, 2002, http://www.edventure.com/conversation/articleprint.cfm?Counter=9396788.

and CD-copying, and over 100 terminals in an open area downstairs and 50 terminals in private carrels and offices with telephone and Internet connectivity upstairs.

The center is state-of-the-art, which was intended to stimulate ICT usage. As Davis observed, "We want to develop a look so that people feel they've walked into a totally new experience. We'll have tremendous outreach potential to young Internet enthusiasts. This is an important part of what we're trying to do—to create a social environment that other organizations are seeking access to."[9]

An E-Commerce Hub in Accra

Davies recognized the potential of his center as a launching pad to move far beyond offering just ICT access and training. Given its importance as one of the key regional trading hubs in West Africa, Accra is home to a large array of local and multi-national companies, many of whom are well positioned to take advantage of appropriate e-commerce applications and services. Thus, Davies moved aggressively to develop BusyInternet as a catalyst for e-business promotion, helping companies participate in export markets and conducting matchmaking events for foreign and local investors.

Davies' strategy was to create an active business incubator located on the top floor of the facility. He took the business incubator concept from the United Kingdom, where many small, London-based companies struggled to find affordable space, more flexible and short-term leasing commitments, and adequate Internet and telephone connectivity. Through the incubator concept, companies also could reserve meeting room space and obtain office support services without having to pay higher rents or retain full-time support staff. The incubator concept rapidly caught on, and a host of local web development and programming companies contracted for space in the building.

We want to take the headache out of providing Internet-based learning—we're more about customer service than program development. There are loads of programs out there already; we just want to give them the platform they need to succeed…. We hope to create a soft landing in all our markets for anyone, businesses or non-profits, seeking the right facilities for the new technology-based business/learning environment.[10]

Through its business incubator, BusyInternet enabled the growth of one of the most visible examples of e-commerce – offshore teleservicing companies. These types of companies primarily serve large multi-national clients and specialize in data processing, customer service, and telemarketing. Teleservicing companies have thrived for several reasons, including comparatively lower labor costs than in western countries and geography—such companies often are located in a time zone several hours ahead of the client. As a result, at the end of the business day, the client can send data to the

offshore site for overnight processing and have the processed data ready at the beginning of the client's next business day.

One of BusyInternet's most high profile clients was the teleservicing company Data Management Internationale (DMI), a Delaware-based company that assisted organizations in managing their paperwork, electronic files, computer reports, and so on. DMI established the offshore data processing facility in Accra as a base for digitizing information from New York City. As of mid-2002, DMI's Accra-based facility had focused primarily on the Department of Environmental Protection in New York, which had contracted with DMI to conduct daily processing of the approximately half million tickets that the Department issued annually. Department employees scanned the tickets in New York and sent them daily as digital photographs to the company in Accra. DMI then would input the data into a searchable database that was sent back to New York.[11]

Although DMI's offshore facility at BusyInternet was highly successful at drawing in business, it did not come without controversy. On the one hand, the company reportedly paid workers almost twice Ghana's per capita income, perhaps explaining why DMI's Accra office was flooded with applications. On the other hand, the facility was likened to an "electronic sweatshop." Employees worked in revolving eight-hour shifts on a 24-hour basis, receiving one half-hour and two ten-minute breaks during their shift. DMI officials even began formulating plans to pay workers by the keystroke and deduct wages for each typographical error. Another concern was the political fallout that often accompanies the creation of offshore call centers or production facilities, particularly the criticism that these facilities take jobs away from US workers. For this reason, DMI moved to shift the data processing for the New York clients back to its US-based office and have the Accra office focus on other clients.

Some Lessons

BusyInternet's successful foray into business incubation and e-commerce promotion provides some useful lessons for other ventures seeking to promote e-commerce.

Lesson: Use public access facilities to support and cross-subsidize commercially driven e-commerce activities. This can enable companies to integrate e-commerce applications incrementally and avoid the cost of purchasing expensive hardware and software and hiring dedicated staff. Also, companies can aggregate their purchase of connectivity and enable

Box 1 Events at BusyInternet

Busy Anniversary *21st - 24th November 2002*
Food, Fashion & Career Shows, ITAfrica Fair, Live Music, Free Browsing, Technology, Fun & People. Come share this special time with us!

Weekend DVD Movies *every friday, saturday & Sunday, 4pm, 6pm, 8pm & 10pm*
Big-screen, surround sound & cool comfort. 10,000 cedis.

Making the Right Choice for You *Last thursday of every month, 10am - 11am – FREE*
One hour of fun and learning aimed at promoting positive sexual. behavioural practises amongst Ghana's youth. Why should you abstain? How can you abstain? To be part of this program, just sign up at the info desk at BusyInternet. "A Collaboration between BusyInternet & PPAG"

Internet for Beginners *Thursday 28th November10am - 12pm – 35,000 cedis*
Learn how the internet works, what's on the internet, email, chat and instant messaging, plus one hour hands on activites including setting up an email account, chatting, finding useful sites…

(http://www.busyInternet.com)

the public access facility to bear the high cost of bandwidth and utilities in many developing countries. Finally, these types of public facilities – and business incubators more generally – can encourage the cross-fertilization of business strategies, including e-commerce strategies.

Lesson: Be aware of potential negative consequences of e-commerce-related activities and create flexible mechanisms for addressing these challenges.

Although it is not readily proven whether DMI was an "electronic sweatshop," this observation raises a critical and often-neglected aspect of e-commerce. As in more traditional working environments, conditions for many employees at e-commerce-oriented companies can be arduous. Therefore, development planners and practitioners should be careful to ensure that appropriate working conditions are built into any e-commerce project. One way to do this is to insist on social responsibility compacts between the donor and the targeted beneficiary to ensure that workers will be well treated. Practitioners also can integrate work quality indicators and transparency requirements into their monitoring and evaluation practices.

Bangladesh Shoe Industry Uses e-Commerce Tools to Prosper [12]

Context

By any measure, Bangladesh is one of the poorest countries in the world. As of the end of 2002, out of a population of approximately 133 million people, some 36 percent of all Bangladeshis live below the poverty line, and unemployment stands at roughly 35 percent. State and private sector corruption, inefficient state enterprises, and resistance to change by powerful trade unions and other bureaucrats have impeded attempts at economic and political reform. As one report summarizes, "…Bangladesh remains a poor, overpopulated, and ill-governed nation."[13]

These problems have carried over to the telecommunications sector. Less than 1% of Bangladeshis have access to a fixed line or mobile phone, and only about one in every thousand people is estimated to use the Internet.[14]

In this difficult environment, the USAID-sponsored Jobs Opportunities and Business Support (JOBS) Program sought to promote innovative business development services and show how companies could leverage a variety of e-commerce tools across business processes. Another key objective was to see if companies who adopted these tools could dramatically increase exports, revenue to local businesses, and employment for women.[15]

In particular, the JOBS Program focused on integrating e-commerce techniques among Bangladesh shoe manufacturers for the purpose of increasing shoe exports to Japan. By most measures, Bangladesh was an unlikely place to find a sector export development effort taking full advantage of electronic commerce techniques. At that time, shoe exports to Japan totaled 160,000 pairs valued at US$ 2.6 million, most of which was from only two or three manufacturers in Bangladesh.

Critical Tools to Target Business Development Services

The JOBS personnel and manufacturers used systematic market research to understand their prospective customers' needs and to help figure out the appropriate types of e-commerce tools to use.

First, the JOBS Program and manufacturers decided to maintain their focus on Japan as the target of the e-commerce-enabled marketing strategy. One of the reasons for this was that Japan did not impose duties on imports from Bangladesh. The project then conducted intensive initial market research via various web sites offering information on the Japanese market, the shoe industry in particular, and the export of shoes from Bangladesh.

Once the industry was targeted, the team used web sites to track down a shoe design expert for the Japanese market. This expert came to Bangladesh to review shoe designs and prepare the firms to attend the important shoe industry fair in Japan. In fact, the project team identified the industry fair itself by more web-based market research, and all fair registration was conducted via the web. To prepare to attend the fair, the project team also paid for membership-only access to the key Japanese shoe industry web site for the targeted Bangladeshi factories involved in the program. From that site, they were able to learn details regarding shoe design, fashion forecasts, trend analysis, and other players in the industry. Based on this information, the program provided training to the enterprises in product design, production processes, and quality control.

After the manufacturers and project team gained this specific information on the industry, the JOBS team worked with the manufacturers on using email to communicate with Japanese business buyers, as well as developing web sites that offered basic marketing information and virtual factory tours. In response to prospective customers' requests, the shoe manufacturers established email addresses to communicate quickly and easily with their prospective customers. The manufacturers also set up virtual factory tours on a web site to boost confidence in their quality and capacity to complete orders satisfactorily.

The JOBS team recognized that e-commerce marketing techniques relied on a variety of media and thus helped three firms develop CD-ROMS for eight Bangladeshi enterprises attending the fair. The CD-ROMs provided information to prospective customers on the firms' designs, factory capabilities, sample shoes, workers' environment, production and quality control capabilities, and a virtual factory tour. According to the JOBS project team, the CD-ROMS significantly boosted the confidence of the buyers in Japan.

Based on the program's work, the Bangladeshi enterprises began receiving orders from Japanese buyers. Much of the communication with these buyers was conducted via email, reducing the costs of communication over fax and express delivery services. The buyers often sent pictures of the products they wanted or adjustments needed in samples sent. Also, some of the Bangladeshi firms were able to use electronic commerce to track down and source raw materials from new suppliers.

Results: Growth in Revenue, Employment, E-Commerce Skills and Confidence

After the program's first year, shoe exports increased from 160,000 pairs to 200,000 (US$ 4.4 million). By 2001, exports had increased to 933,000 pairs valued at US$ 20.5 million. Initially, three firms exported shoes to Japan, but subsequently 10 firms began exporting shoes, and almost 200 new jobs were created. These gains also affected poor women in villages nearby the factories. Because the shoes to be exported required handiwork that was not possible in the factory set-up, the factories sub-contracted this work to a group of village women, who completed the work in their homes and delivered it to the factory. For example, one of the shoe factories contracted with four groups of women, almost 120, to do hand stitching.

Some Lessons

E-commerce is not a panacea for business growth. The JOBS program emphasized that integrating e-commerce applications was only one important component of successful business development, which also required that the manufacturers re-align their sales and marketing strategies from top to bottom. E-commerce can be most effective when employed as part of comprehensive business development, including industry analysis to target appropriate industries, training, product quality improvement, and so on.

Use e-commerce techniques to cater to specific customers. In the Bangladesh example, the JOBS personnel and manufacturers were careful not to try to be all things to all people. They recognized that they had limited capacity to diversify and market their brands and that it was most feasible to segment their market and build from there. By catering to and successfully fulfilling orders from one set of recognized buyers, the manufacturers could build their brand reputation and have the confidence that the buyers themselves would do word-of-mouth marketing on behalf of the manufacturers.

Web portals and tourism – the case of Mexicana Airlines

Background

One of most promising areas for e-commerce is in the tourist sector.[16] In part, this is due to the strength of that sector in many developing countries, as well as the fact that much of the "value-added" within the buyer-seller transaction relies on the quality and speed of data as opposed to the delivery of a tangible product. For example, tourist companies and booking agencies make much of their profits as intermediaries between the consumer and the primary service provider (e.g. hotel, cruise ship, airline) through electronic processing, online booking, and user-friendly descriptions of the tourist destination.

In particular, the airline industry can be credited with pioneering many e-commerce practices. For example, the airline industry is credited with creating some of the world's first business-to-business (B2B) electronic information exchanges and marketplaces. The industry also was the first to develop computer reservations systems and transform them into global distribution systems.[17]

One might assume that a relatively young, "upstart" airline company would pioneer the use of Internet-based e-commerce in the airline industry as opposed to an older established carrier. Yet precisely the opposite occurred. In fact, one of the earliest airline companies to enter the online industry was Mexicana Airlines, the fourth oldest airline in the world—privatized in the early 1990s—with some 6,000 employees currently serving over nine million customers per year.[18]

What makes this case particularly relevant for development practitioners is that Mexicana began focusing on an online business platform even though credit card usage and Internet penetration in Mexico (and Latin America more generally) was almost non-existent. To solve this dilemma, Mexicana carefully tailored and expanded its online platform and applications to meet—indeed shape—the evolving capacities and needs of its consumers.

Expanding the E-Commerce Platform

In 1995, Mexicana established its presence online, and in 1997 it became the first airline to offer a Latin American web site. While recognizing that e-commerce could be a key element of its business growth, however, the company wisely realized that there was inadequate infrastructure to support more advanced applications. Thus, Mexicana focused on using the early versions of its web site to complement its core business functions and provide only basic services (e.g., allowing passengers to make online reservations). But as the company built its customer base, and as the availability of cost-effective Internet applications and online transactions in Latin America became more widespread, Mexicana felt confident that it could expand its online presence.

In 2000, the company expanded its e-commerce platform by upgrading its web site into a comprehensive portal. In particular, Mexicana wanted to use the portal to develop online ticket sales and facilitate communications between customers and employees. The company also looked at the portal as a means to enable market segmentation, which means offering customized information to specific customers. Finally, the company wanted to determine if it could use an expanded online platform to increase revenues and decrease costs, encourage customers to purchase non-core products (such as tour packages), and improve customer service in such areas as reservations.

Mexicana hired two firms, Vignette and Electronic Data Systems (EDS), to assist in web site content development and in creating robust and reliable systems for reservations and communications protocols. In designing these upgraded systems and content, all the players agreed that the portal had to be easy to use by all types of customers and that it should be centered around "scalable infrastructure" so it could grow with market demand. To ensure the usability of the portal, Mexicana created a system whereby non-technical users from across its business units were instructed to create and constantly update the personalized content to match the specific interests of customers.

By the end of the upgrade project, Mexicana had rolled out a comprehensive web portal (www.mexicana.com) that enables customers to make airline reservations, purchase tickets, plan and construct vacation packages (including all-inclusive travel packages offered by Mexicana), and check on their frequent flyer accounts easily. To encourage customer use of the portal, Mexicana also started a program called Mex-E-Savers, which provides special prices via the web site.

The new portal strengthened the company's core business processes in several areas. First, it enabled Mexicana to provide highly customized and relevant information to its consumers proactively. To do so, the portal takes information provided by the customer when he or she first registers and encourages the customer to create his or her own preference profiles. The airline then creates and sends out information on specific travel packages relevant to the customers' age, marital status, geographic base, and other demographics. The portal also attracts customers by providing information on local restaurants, hotels, and official information on travel such as visas and permits.

Equally important, Mexicana used the upgrade to strengthen its electronic transaction processing capabilities. Although credit card usage is still problematic in Mexico, as it is in much of Latin America, the online platform has built in a highly secure and redundant system. Mexicana's system can conduct a search of the customer's account automatically to determine if it contains sufficient funds for the customer to charge the ticket. After the charge has been confirmed on the customer's credit card, then the sales agent concludes the sale by sending an electronic confirmation to the customer, who also has a customer profile page generated and updated by Mexicana.

The portal also has formed an integral component of Mexicana's strategy to partner with other large airline carriers (the so-called "Star Alliance").[19] Through this alliance, Mexicana and its partner airlines offer travelers such services as the ability to earn and redeem frequent flyer miles or points on any member airlines, which enables Mexicana to leverage the customer bases of the other airlines.

In all, the upgraded portal has enabled Mexicana Airlines to increase its business dramatically. As of 2002, the company generated an estimated $1 million monthly in online sales and new revenue streams in both traditional airline tickets as well as tour packages. Online ticket sales grew from 20 to 34 percent of the company's total ticket sales, and, as Internet costs dropped between 15-20%, the company also has improved its capacity to handle online business overall.

Some Lessons

Focus on the Customer when Designing the Application and Technology. Mexicana developed its Internet portal by first examining customer needs and capabilities and then working backwards to develop an appropriate system to cater to its customers. As this case demonstrates, Mexicana was not intimidated by the initial lack of Internet or credit card penetration in its marketplace. Instead, it first focused on using its online platform to complement its traditional business process and establish a cost-effective "toe-hold" in e-commerce. Mexicana then wisely scaled its investment in the online platform to accommodate and take advantage of the growing Internet presence among Mexican consumers.

Similarly, those in other environments with low Internet penetration need not delay e-commerce initiatives. Instead, development practitioners or companies in developing countries can conduct analyses of their local industries before integrating e-commerce technologies and services into business processes. For example, such efforts should examine the customers' use of ICTs, their ability to engage in electronic transactions, their literacy levels, and the level of personal networking required to sell a product as opposed to technical capacities. Once such an analysis is completed, realistic and potentially high-impact e-commerce projects can be developed.

Be Aware of the High Up-Front Costs of Many E-Commerce Applications. Mexicana was committed to upgrading its e-commerce capacity across the entire range of its business cycle, from developing and distributing marketing content to enabling electronic transactions. Companies seeking to invest in e-commerce applications need to conduct an extensive and realistic analysis of the types of processes they want to "e-enable." This analysis should cover a wide range of issues, including types of customers and suppliers, primary costs and revenues, appropriate e-commerce techniques, and available technologies.[20]

Caveats and Conclusions[21]

When properly designed, electronic-commerce techniques can help companies ally with new partners, promote their products in new markets, reduce operating costs, and spin off new businesses and products. Yet merely installing an e-commerce application is not sufficient to ensure high profitability.

E-commerce does not benefit all economic sectors to the same degree or in the same ways. It is most likely to benefit sectors that have information-intensive activities and products or services that can be used or delivered electronically. These sectors include financial services, education, professional services such as consulting, and government services. The tourism industry, of critical importance to many developing countries, also is being transformed because all the information needed for tourists to make their choices can be shared electronically.

But there are ways that even sectors with heavy, fragile, or volatile products can benefit from employing e-commerce techniques to do business with their customers and suppliers: setting prices, placing orders, improving many business processes such as product design (and collaboration), customer support, and product documentation distribution. The florist industry is an example of one with very fragile and perishable products that uses e-commerce tools well, adapting to electronic auctions between buyers in Amsterdam and sellers worldwide (including East Africa).[22]

Depending on a SME's sector, its move to electronic commerce may be a defensive one, just to keep pace with competitors (e.g., in tourism). In other cases, a SME will be able to use electronic commerce to get a jump on less innovative players

in its sector by using ICTs to forge new partnerships with e-commerce-enabled businesses in other countries.

Although much publicity is given to the "B2C" aspects of electronic commerce, the greatest potential for gains from electronic commerce will come from "B2B" electronic commerce. Businesses in developing countries that make products that other businesses use are the first that should evaluate how they can take advantage of electronic commerce.

Most importantly, e-commerce is not a panacea for business growth. Many companies have tried and failed at using e-commerce, which is not necessarily easy to use. In some developing countries, SMEs have been reluctant to consider using electronic commerce because so much on the Web is in English; in others, the high cost of Internet access has been a deterrent. Indeed, engaging in e-commerce requires considerable up-front investments in time, capital, and effort.

As the three examples from Ghana, Bangladesh, and Mexico demonstrate, e-commerce is a tool that can help a well-managed company do better. Before entering the electronic arena, companies (and development practitioners) first should ensure that:

- the firm's organizational and marketing capacity is strong;
- the ICT infrastructure is adequate to support the application;
- the people using the ICTs are sufficiently skilled;
- the core product meets customer demand; and
- the commitment to re-defining the business process exists.

With these factors in place—and a little good luck—sustainable and profitable business improvements can accrue.

Footnotes

[1] E-commerce can be defined as using electronic (primarily digital) modes of communication to facilitate business process, including retail, inventory management, and customer service.

[2] One exception to this includes E. da Costa, *Global E-Commerce Strategies for Small Business*, 2001. The MIT Press.

[3] A large, on-line retail bookseller based in the United States.

[4] CIA World Factbook, Ghana 2002. Refer to www.cia.gov/cia/pblications/factbook/geos/gh.html.

[5] United Nations, Department of Economic and Social Affairs / Millenium Indicators – Ghana. Refer to http://millenniumindicators.un.org/unsd/mi/mi.asp.

[6] In addition to the cyber cafés, public access facilities that provide ICT services and access as well as training programs have emerged in Ghana. These facilities, known as Community Learning Centers (CLCs) or telecenters have grown up primarily in the country's secondary cities and smaller towns. See the case study on AED/LearnLink's CLCs in Ghana.

[7] "Internet Business Centres Spring Up Across the Continent . . . Now Ghana," *Balancing Act News Update*, issue no. 52, http://www.balancingact-africa.com/news/back/balancing-act52.html.

[8] A. Safo, "Busyinternet Launches a Nation Onto World IT Map," Accra Mail, November 23, 2001. See http://allafrica.com/stories/printable/200111230024.html.

[9] "Internet Business Centres Spring up X-Ross Continent . . . Now Ghana."

[10] "Internet Business Centres Spring Up Across the Continent…Now Ghana," op cit.

[11] R. Worth, "In New York Tickets, Ghana Sees Orderly City,' New York Times, July 7,2002, via www.busyinternet.com.

[12] This overview was prepared by Judith E. Payne with assistance from IRIS team members A. Imran Shauket, Project Director, JOBS Project, Bangladesh, Asif Ahmed, and Faisal Saeed.

[13] CIA World Factbook, Bangladesh 2002.

[14] Office of Telecommunications Technologies, International Trade Administration, US Department of Commerce. Telecommunications Country Profile: Bangladesh. http://www.tiaonline.org/policy/ref/countries.cfm.

[15] Implemented by the IRIS (Institutional Reform and the Informal Sector) Center at the University of Maryland. See http://www.iris.umd.edu/adass/proj/bangladesh.asp. See also USAID Program Data Sheet: Bangladesh; http://www.usaid.gov/country/ane/bd/388-005.html.

[16] UNCTAD e-commerce study, M. Tetelman study, BCG study on Latin America.

Footnotes *continued*

[17] B. Smith, D. Gunther, B. Venkateshwara Rao, and R. Ratliff, " e-Commerce and Operations Research in Airline Planning, Marketing, and Distribution," 2000.

[18] Information for this case study on Mexicana Airlines relies primarily on EDS Case Studies – Mexicana Airlines (www.eds.com/case_studies/case_mexicana_airlines.shtml) and Vignette, "Mexicana Airlines flies high with Vignette Technology" (www.vignette.com).

[19] The Star Alliance consists of Air Canada, Air New Zealand, ANA, Austrian Airlines, bmi british midland, Lauda Air, Lufthansa, Mexicana, SAS Scandinavian Airlines System, Singapore Airlines, Thai Airways International, Tyrolean Airways, United Airlines and VARIG.

[20] For a helpful overview of how companies can weigh the costs and benefits of e-commerce, refer to J. Payne, "E-Commerce Readiness for SMEs in Developing Countries: A Guide for Development Professionals," Academy for Educational Development/LearnLink, 2002.

[21] This paper's conclusions were drawn from "E-Commerce Readiness for SME's in Developing Countries: A Guide for Development Professionals," prepared for AED by Judith E. Payne, November 2002

[21] See Humphrey, John, *Business-to-business e-commerce and access to global markets: exclusive or inclusive outcomes?* Institute of Development Studies, Final Draft, January 2002. This paper's Chapter VII, Helpful References, number 22.)

[22] For an analysis of the impact of e-commerce on various industries, see Mann, Catherine L., "Electronic Commerce, Networked Readiness and Trade Competitiveness," in Kirkman, Geoffrey, P. K. Cornelius, J. D. Sachs, K. Schwab, *The Global Information Technology Report: Readiness for the Networked World*, World Economic Forum, New York, 2002. (This paper's Chapter VII, Helpful References, number 24.)